

## ABSTRACT

A method of fabricating solder assemblies for forming solder connections that include a dielectric base having a non solder-wettable surface, a plurality of solder-wettable pads exposed to said surface, and an electrically conductive potential plane element having a non solder-wettable surface overlying the surface of the base in proximity to the pads but spaced from said pads. The non-wettable surface of the potential plane element may include a metal such as nickel or a metal oxide. The potential plane element thus performs the functions of a solder mask to prevent solder from forming short circuits between adjacent pads, and may also act as a ground plane, power plane or shielding element.

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